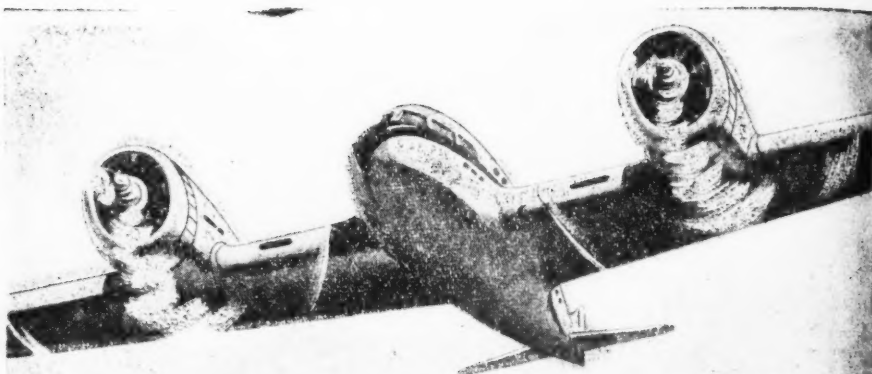


*The Fortnightly*  
**REVIEW**

**OF THE CHICAGO DENTAL SOCIETY**

*April 1, 1947*

*Volume 13 • Number 7*



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# THE CALENDAR

## YOUTH NIGHT TUESDAY APRIL 15

### *Chicago Dental Society*

North Ballroom

Stevens Hotel

Designed to Stimulate Youth Interest in Dentistry

***April 1:***

**KENWOOD-HYDE PARK BRANCH:** The regular monthly meeting will be held at the Sherry Hotel. Dinner will be at 6:00 p.m. The speaker for the evening will be Dr. O. H. Stuteville, who will speak on the subject of Oral Surgery.

***April 1:***

**SOUTH SUBURBAN BRANCH:** The regular monthly meeting will be held at Surma's Restaurant, 173rd and Western Avenue. The speaker for the evening will be Dr. David Law, Assistant Professor of Children's Dentistry, Northwestern University, whose subject will be "Practical Caries Control."

***April 7:***

**NORTH SIDE BRANCH:** Clinic night featuring election and installation of officers will be held at the Edgewater Beach Hotel. Dinner will be at 6:30 p.m.

***April 8:***

**WEST SUBURBAN BRANCH:** The regular monthly meeting will be held at the Oak Park Club. The speaker for the evening will be Dr. Wayne B. Slaughter, Professor of Plastic and Oral Surgery at Loyola University Dental School, whose subject will be "Treatment of Facial Anomalies."

***April 8:***

**NORTH SUBURBAN BRANCH:** The regular monthly meeting will be held at the North Shore Hotel, Evanston. Dinner will be at 6:30 p.m. The speaker for the evening will be Dr. Ira Jones, whose subject will be "Peeps of Things to Come in Modern Chemistry."

***April 8:***

**ENGLEWOOD BRANCH:** The regular monthly meeting will be held at the Hayes Hotel. Dinner will be at 6:30 p.m.; business meeting and election of officers at 7:30; program at 8:30. The speaker for the evening will be Dr. George W. Teuscher whose subject will be "Diagnosis and Treatment Planning for the Child Patient."

# *The Fortnightly* REVIEW *of*

THE CHICAGO DENTAL SOCIETY

*April 1, 1947*

*Volume 13 • Number 7*

## Youth Night Conference Issues Challenge to Chicago Dentists

April Monthly Meeting A Double Header Attraction

Dr. Gerald D. Timmons, Dean of Temple University, School of Dentistry and Dr. William "Big Bill" Osmanski of Chicago will share the spotlight at the April Monthly Meeting. The meeting will be held in the North Ball Room of the Stevens Hotel, Tuesday evening, April 15. Dinner will be served at 6:30 followed by a short business meeting and the main address at 8:00 o'clock. The officers and the Youth Night Committee, headed by Dr. Harold W. Oppice, have gone all out to make this meeting worth while. Letters have been sent to the principals of high schools and junior colleges in the Chicago area asking them to extend an invitation to selected senior boys and junior college men and the Vocational Guidance Counselor of each school.

### SPONSORSHIP

However, to make the meeting successful the cooperation of the members of the Chicago Dental Society is essential. As was the case last year, members have been asked to sponsor the students and purchase their dinner tickets. But that isn't enough. It is extremely important on such an occasion as this that a large percentage of the membership be on hand to welcome these students. So the proposition boils down to this: buy a ticket for a student and one for yourself. If a member has a prospective student of his own to bring he is encouraged to do so.

### PROGRAM

The program officially starts at 2:00 P.M. with a visit to one of Chicago's three dental schools. Here guests will observe classroom instruction, laboratory activities and actually see advanced dental students engaged in dental care of patients. Guests will go from the schools directly to the Stevens Hotel by bus. During the dinner hour, Dr. Osmanski, famed fullback of the Chicago Bears, will regale the assembly with football stories, real and legendary, and show some motion pictures of football at its best. Following the dinner hour a short business meeting will be held in order to demonstrate the professional and business aspects of a dental society, as well as the fellowship that exists in the profession. President Humphrey will preside.

Dr. Timmons has appeared before Chicago Dental Society audiences before. He is an accomplished speaker and, what's more, intersperses his discourse with bits of humor which presages a hearty reception by the student guests. He will discuss from a guidance point of view various aspects of a dental career as they relate to the individual dentist and to society as a whole. As a final word: reservations should be made well in advance. Dinner tickets will be \$4.50. Send your reservation and your check to the Chicago Dental Society, 30 North Michigan Avenue, Chicago 2, Illinois.

# Chicago-Cook County Health Survey

## Report Shows Need for More Active Dental Care Program

The preliminary report on the dental health of the school children of Chicago and Cook County has been presented to the Committee on Dental Health Education of the Chicago Dental Society. The survey was conducted by Dr. William P. Kroschel, Senior Dental Surgeon of the United States Public Health Service and Dr. James Hawkins, a dentist in the employ of the Illinois State Department of Health. It was their responsibility to gather and analyze data for the evaluation of dental health in the Chicago-Cook County area and to make recommendations for the improvement of dental health in the child population of Chicago and Cook County as a whole.

### SURVEY METHODS

From the results of numerous surveys in which detailed methods were used for determining the dental status of each child, it has been shown that among large survey groups there is a close association between the percentage of children with at least one carious permanent tooth by age and the average number of carious permanent teeth per child by age. Because of this close association it is possible to estimate either of these factors by obtaining the other. Since in this case the percentage of children with at least one carious tooth is much more readily obtained than the other, it was used by the directors of the survey to obtain an estimate of caries experience.

### COMPARISONS

Chicago has a white school population of 690,408 (1940 census) for children aged five to seventeen, and a Negro school population of 57,156 in the same age group. Out of this total, 13,444 white children and 3,780 Negro children were examined. Samples of children were taken from both Public and Parochial schools and these schools were selected at random. The survey indicated that by

the time Chicago white children reached age eighteen more than 98 per cent experienced dental caries. On the other hand, at age eighteen about 81 per cent of the Negro children in Chicago have a substantially higher dental caries prevalence rate than that found for white children.

Oak Park, one of the communities surveyed in Cook County outside of Chicago, has a dental caries prevalence rate that, on the whole, follows the Chicago curve for white children. The other communities, Melrose Park, Lemont and Matteson, have a lower dental caries prevalence than that which is shown for Chicago white children and Oak Park children.

### DENTAL FACILITIES AND PERSONNEL

The magnitude of the dental care program in the Chicago-Cook County area has been indicated in the preceding part of the report. A review of the facilities and personnel available to meet the need for dental services and the extent to which they are being used follows. The procedures used in collecting the information consisted of questionnaire reports from official and voluntary agencies and from dentists in private practice, supplemented by personal visits and conferences with representatives of the Chicago Dental Society. At the time the information was collected there were one hundred and four centers and dispensaries in which some form of dental service program was in operation. These dispensaries were staffed by two hundred and ninety-nine clinical dentists who were providing five hundred and twenty-five half-days of care each week. In Chicago there are ninety-six active dental clinics and twelve inactive ones. Dental services are restricted to special cases or beneficiary groups in seventeen of these and are limited to children in fifty-three others. The remaining twenty-four dispensaries provide dental care for adults and



in most cases for children mainly from the low income groups. Both diagnostic and remedial dental services are rendered in most of these.

Exclusive of the full time clinic staffs of the three dental schools, there are two hundred and thirty-three dentists practicing in clinics in Chicago. There are seven dentists who have internships in three hospital dispensaries. In Cook County outside of Chicago the major part of the available dental service is for school children. There are some fifteen centers where some form of dental program is in operation. Reasonably complete dental care for children is provided by three schools under the local boards of education and by three welfare agencies.

#### RECOMMENDATIONS (CHICAGO)

After analyzing the personnel and facilities available, the directors of the survey recommend: (1) The Chicago Board of Health increase its dental staff immediately to utilize present dental equipment to its fullest extent. Twenty-four more clinicians and one supervisor should be added to the staff for this purpose. (2) Attempts should be made to make dental services available in the Chicago grade schools on a twelve-months basis. (3) Dental health education should be made an integral part of the grade school program. (4) A further study of the dental needs of pre-school children and the effectiveness of the present facilities in giving care to this group should be undertaken immediately. (5) In-service training program for professional personnel should be established by all organizations and agencies which are rendering services to children. (6) A uniform dental recording system should be established and put in operation by all agencies which are extending dental care to children. (7) The need of dental internes in hospitals should be vigorously stressed and professional

supervision and instruction provided for them. (8) All hospitals with dental personnel and facilities should put into operation the basic requirement for a department of dentistry, as outlined by the Committee on Hospital Dental Service of the American Dental Association. (9) The Chicago Dental Society take steps to improve its advisory services to the Cook County Hospital Children's Dental Clinic. (10) It is recommended that industries be encouraged to provide the following services to its employees: Periodic oral examination and diagnostic service; emergency dental treatment; treatment of oral sepsis; education in dental health and encouragement of regular dental care.

#### RECOMMENDATIONS (COOK COUNTY)

In Cook County outside of Chicago, the directors of the survey recommend that: (1) The Cook County Department of Public Health appoint a Dental Director and five clinicians to staff the idle clinics under its jurisdiction. (2) All official health agency dental programs in Cook County be coordinated by the Cook County Department of Public Health Dental Division. (3) Dental health education as an integral part of the grade school program should be expanded. (4) A further study of the dental needs of pre-school children and the facilities available for their treatment should be undertaken as soon as a dental division is established. (5) In-service training program for professional personnel be established by all organizations and agencies which are rendering dental services to children. (6) A uniform dental recording system be established. (7) Industries should be encouraged to provide the following services to its employees: periodic oral examinations; emergency dental treatment; treatment of oral sepsis and education in dental health and encouragement of regular dental care.



# EDITORIAL

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## POSTGRADUATE STUDY

The Midwinter Meeting of 1947, to the casual observer, was much like its pre-war predecessors. There was the same jam around the registration desk, the same late comers looking for tickets to the limited-attendance clinics, the same throngs wandering, somewhat aimlessly, about the exhibit hall and the same hail-fellows-well-met at the bar. And yet the 1947 meeting was different. Different because of the big proportion of those in attendance who were wearing the badge of honor, the gold discharge button. It was in evidence everywhere, worn by young men who, for the most part, had come to the meeting in search of knowledge.

Many of them must have been disappointed. They found the lecture rooms full to overflowing and the table clinics out of hearing and seeing range, except for the lucky few who managed to squeeze into the front rows. There were so many people trying to occupy the same place at the same time that few spectators were particularly happy. Obviously the ex-service man didn't acquire too much knowledge.

There appear to be two possible courses of action that could remedy the situation. One might be to limit the Midwinter Meeting sessions to Chicago Dental Society members. This idea is too fantastic to consider seriously. The other one is to reestablish the Study Club.

As will be recalled, the Study Club died in 1941 after ten years of existence. At that time the Study Club Commission reported that a gradual decline in enrollments made it necessary to discontinue the Club. There was no one, simple explanation for the decline but one of the many reasons the Commission offered was this: "the overwhelming majority of members are smugly complacent about their professional ability." That, perhaps, is the crux of the matter. Too many members lacked the time or the interest to keep up with the latest advances in dentistry. Too many had no desire to supplement the education acquired in dental school.

On the other hand, here is a group of young men who undeniably want to continue their education and who have shown by their sacrifices in war that they have the stamina and will power to succeed if given some encouragement.

Now is the time when a new program should be developed, either centrally or in the Branches. Now is the time when the older members of the Society should show their appreciation in a substantial way by making it possible for their younger colleagues to augment their service training with tried and true methods of practice building.—*James H. Keith.*

# NEWS AND ANNOUNCEMENTS

## NOMINATIONS FOR C.D.S. OFFICERS ANNOUNCED

Nominations for the various offices of the Chicago Dental Society to serve during 1947-48 have been closed.

According to Article IX, Section II of the constitution and by-laws, all nominating petitions must be submitted not later than thirty days prior to the annual election. Only one candidate has been nominated for each office and as the time limit for nominations has expired there will be no contest. The unopposed candidates are: President-elect, Robert J. Wells; vice-president, Edwin W. Baumann; secretary, Arno Brett; treasurer, Vincent Milas. Their formal election will take place at the regular April meeting. President-elect Harry A. Hartley will be advanced automatically to the presidency and will be installed at the May meeting.

## UNIVERSITY OF ILLINOIS ANNOUNCES LECTURE COURSES

The University of Illinois College of Dentistry is sponsoring a series of evening courses on basic and clinical dental subjects beginning in April. The courses will be given at the school, 808 South Wood Street.

The first course will deal with Diet and Nutrition in Dental Practice and is scheduled for six consecutive Mondays from 7:30 to 9:30 p.m. beginning April 7. The faculty for this course is comprised of Dr. Maury Massler, Associate Professor of Pedodontics and Dr. J. B. Youmans, Dean of the College of Medicine.

The second course will cover the Masticatory Mechanism, its biology, function and treatment. Dr. K. A. Big-nell, Chicago, crown and bridge; Dr. A. G. Brodie, Acting Dean, University of Illinois College of Dentistry; Dr. R. R. Gillis, Hammond, Indiana; Dr. Richard Holic, assistant professor of prosthetic dentistry, University of Illinois College of

Dentistry and Dr. J. R. Thompson, professor of orthodontia, Northwestern University compose the staff of lecturers for the course. It will begin Wednesday, April 16, and continue for six consecutive Wednesdays from 7:30 to 9:30 p.m.

These courses are designed primarily for dentists who are unable to afford full time for postgraduate study but who wish to continue their postgraduate studies on a part time basis. The classes are limited to twenty-five persons and registration should be made in writing with payment of tuition fee of \$25.00. Applications will be considered in the order in which they are received. The courses come under the provision of the G. I. Bill. For further details contact: Dr. Isaac Schour, Associate Dean in Chicago of Postgraduate Studies, 808 South Wood Street, Chicago, 12, Illinois. Telephone Monroe 3900; extension 375.

## KENWOOD-HYDE PARK NOMINATES NEW OFFICERS

The Nominating Committee of the Kenwood-Hyde Park Branch submit the following report for publication: President, W. L. Spencer; President-Elect, Chester C. Blakely; Vice President, C. Davidson; Secretary, Lawrence H. Johnson; Treasurer, P. L. Mathisen; Branch Board of Directors, Robert G. Pinkerton.

## 108th MEDICAL BATTALION REORGANIZES

Chicago's own 108th Medical Battalion, Illinois National Guard, is now in the process of reorganization and is in dire need of dentists to accept commissions as Captains or First Lieutenants. These vacancies are profitable ones, in that they receive pay according to the rank they hold for each two hour period of drill each Wednesday evening. Summer encampments consist of a two-week period with full pay and allowance. For further information call Superior 7677 or

contact Captain Albert E. Fisk, 234 East Chicago Avenue.

### **SURPLUS DENTAL EQUIPMENT AVAILABLE**

The Military Affairs Committee of the Illinois State Dental Society announces a new method to effect a more equitable plan of distribution of surplus dental equipment. Hereafter, all component societies will be advised by the secretary of the Illinois State Dental Society whenever any "dental surpluses" become available. It will then be the responsibility of the component secretary to pass the information on to all interested, qualified individuals in his district.

Upon receipt of a surplus property release announcement from the state secretary, the component secretary will advise what is being offered, when and where the sale is to be held; it will be up to the individual to develop negotiations from this point. All sales will be first come, first served from now on and the only credentials required are a copy of separation papers or other documentary proof of service.

Presently the War Assets Administration is advertising sales in Fort Worth, Texas; Philadelphia, Pennsylvania; Atlanta, Georgia and Boston, Massachusetts. All veteran dentists are privileged to participate in these sales. For further information contact the central office of the Chicago Dental Society, State 7925.

### **CHICAGO NUTRITION ASSOCIATION CONFERENCE**

John B. Youmans, M.D., Dean, University of Illinois, College of Medicine, will discuss "Nutrition Studies and Their Possible Application to Chicago" at the Chicago Nutrition Association Conference, April 11, 8:00 p.m., Thorne Hall, Northwestern University, Lake Shore Drive and Superior Street.

Because of Dr. Youmans' experience and international reputation he is particularly fitted to direct the thinking of professional groups in Chicago toward

constructive plans for attacking its nutritional problems.

Samuel A. Goldsmith, Executive Director, Jewish Charities and Advisory Committee Chairman, Chicago-Cook County Health Survey, will discuss "The Chicago-Cook County Health Survey; How It Was Made; What May Come of It."

With a view to determining needs for action, the Chicago Nutrition Association is bringing the recent Health Survey recommendations to the attention of professional groups concerned with improving the nutritional status and health of the people in greater Chicago. There is no admission charge for this Conference.

### **AGE LIMIT FOR TRANSFERS RAISED**

Since the publishing of the announcement relative to active duty for Reserve Officers in the February 15 issue of the Fortnightly Review, the age limit for transfer of naval reserve dental officers to the Navy Dental Corps has been increased three years for all ranks.

Officers eligible for transfer under the increased age limit may apply regardless of the length of time that they have been on inactive duty and will not lose the precedence that they held on the date of separation.

### **DR. JOHN CANNON BLACK 1877-1947**

Dr. John Cannon Black, a long time member of the Englewood Branch of the Chicago Dental Society, died suddenly at his home January 28. He was past president of the Englewood Dental Society and Director of the Chicago Dental Society from 1935 to 1938.

Dr. Black was best known for his activities in the American College of Dentists. He was its president in 1942. He was a regent from 1936 to 1941 and was chairman of the Journalism Committee for two years prior to his death.

He is survived by his widow, Margaret; three brothers, Dr. Robert A., a pediatrician

*(Continued on page 20)*

# Some of the Factors Involved in Gold Inlay Technic\*

George M. Hollenback

Gold is the most versatile and indispensable of all restorative materials. As for physical properties, they are such that it is almost an ideal material. Only two of its properties are seriously objectionable. They are its color and high thermal conductivity. In its pure form it is the most ductile and malleable of all metals. It is this property of malleability which permits gold to be hammered into sheets so thin that they will transmit light. In foil form, gold was probably the first material to be used in restorative dentistry. Until about one hundred years ago, it was used in its non-cohesive form, its properties of cold welding being unknown. When this property was discovered and utilized, its scope and usefulness as a restorative material was greatly increased. Today cohesive foil restorations and those made of a combination of cohesive and non-cohesive foil are the most durable and generally satisfactory of all dental restorations.

By alloying with other metals and by certain methods of cold working and heat treatment, gold alloys can be produced which possess physical properties such that they will satisfactorily meet the requirements of all types of restorative dentistry. It is also ideally suited for the construction of orthodontic appliances. Gold and its alloys may be formed by hot or cold working or by casting. It is this last phase of gold manipulation that will be dealt with in this presentation.

Before entering into a discussion of some of the factors involved in inlay technique, permit me to digress for a moment to caution my fellow practitioners against discarding this tried and proven material. There is nothing in the realm of dental materials which anywhere near approaches it in excellence, nor is there

anything on the horizon which gives any promise of rivaling gold in excellence. Certainly this is true of the organic materials which are being so extensively used and ballyhooed at this time. While I do not pose as a prophet, yet it is my firm belief that the misuse of materials of this type will be just one more thing that our profession will have to finally explain to the public.

## CASTING PROCESS

The cast gold inlay has been in general use for nearly thirty-nine years. During that time it has assumed a dominating position in the field of operative dentistry. A great part of the advancement in both the fields of operative and prosthetic dentistry during the past four decades can be attributed to the casting process. How many of us have stopped to consider what the status of dental practice would be if, for some reason, this process would no longer be available? The practice of restorative dentistry, as we now conceive it, would immediately become entirely impossible. In my opinion, the application of the casting process to dentistry represents the greatest single technical achievement in the entire history of our profession. When Dr. Taggart gave us the casting process in 1907, it was far from perfect. How could it be otherwise? Dr. Taggart, while a very skilled technician with a fine conception of mechanical procedure, was not a scientist. His work was done empirically. He did not possess the knowledge or equipment necessary to approach this problem in a scientific way. In view of this, it is very remarkable that the Taggart technique reached the degree of excellence which it did. Except that it overlooked the discrepancy produced by the shrinkage of gold, the Taggart tech-

\*Read before the 1946 Midwinter Meeting of the Chicago Dental Society.

nique was quite good. Taggart recognized the fact that gold did undergo shrinkage when cast, but he contended that with his method, applying continuous pressure while the metal was solidifying, the effect of shrinkage was completely overcome. It is true that the application of pressure does overcome the shrinkage of the metal caused from change of state, that is, from liquid to solid. It does not in any way overcome the shrinkage from change of temperature between the freezing point of the metal and room temperature. This last shrinkage is the one with which we are concerned in casting gold and its alloys to dimension. Its effect has been recognized by practically everyone who has seriously worked on the problem of dimensional casting. Less than one year after Taggart gave us the casting process, J. G. Lane not only recognized that the shrinkage of gold was a serious matter, but he also made the first scientific attempt to overcome its effect. Lane ascertained that an investment material of high silica content (three parts silica, one part plaster of Paris) showed considerable thermal expansion. He demonstrated that castings made in a mold heated to a cherry red were more nearly correct dimensionally than those cast in a cold mold. Lane did not know what the shrinkage of gold was, nor did he know the thermal expansion value of the investment used. His work might be described as having scientific concept applied in an empirical manner.

In 1909, Van Horn developed his technique of a combination of thermally expanded wax and investment. By this combination, he could produce quite a marked range in the amount of compensation. He stated that he could, at will, make castings that were too small, those which fit accurately, and those which were too large. Incidentally, this represents about the status of the casting art today. It is unfortunate, however, that generally speaking, more castings are being made which are oversize than those which are dimensionally correct. Weinstein and Coleman, in the early twenties, made a study of the casting process and

for the first time attacked the problem in its entirety and in a scientific manner. In this investigation, the physical properties of waxes, investment and gold and its alloys were carefully studied. Coleman established the linear casting shrinkage of gold and its alloys as being 1.25 per cent of  $\pm 0.1$  per cent Coleman believed that if any variation existed between the shrinkage of gold and its alloys, it came within the element of experimental error, which was  $\pm 0.1$  per cent.

#### COMPENSATING TECHNIQUE

The linear shrinkage of gold having been established as 1.25 per cent, a compensating technique was developed whereby wax patterns and investment were thermally expanded sufficiently so that the sum of these expansions equalled 1.25 per cent, which was believed to be the linear casting shrinkage of gold. With this technique, quite accurate castings were made, which would tend to substantiate the shrinkage figure of 1.25 per cent if it were not for one discrepancy. This discrepancy was the fact that the setting expansion of the investment was overlooked. It is quite safe to assume that the setting expansion of the investment used was in the neighborhood of 0.3 per cent. This seems to be about average expansion of high silica investments, similar to the ones used by Weinstein and Coleman.

With comparatively few exceptions, 1.25 per cent was accepted as the linear shrinkage of gold and its alloys and has been the basis on which most of the research in the casting process has been done. However, J. S. Shell, in a research carried on at the University of California Dental School, established the linear casting shrinkage of gold alloy as being approximately 1.7 per cent. Carl Scheu, in his research on the hygroscopic compensation technique, of which he was the originator, found that compensation values considerably higher than 1.25 per cent were necessary in the production of precision castings. For instance, in castings made with a typical hard inlay gold, it was found that a compensation value



of 1.55 per cent was necessary to secure precision results. Pure gold apparently required a somewhat higher compensation value. Scheu used exceedingly accurate equipment and methods in his research and a careful study of his work would indicate that his findings are probably correct.

Many others have claimed that variation in the fit of castings could be noticed between different gold alloys. For instance, in 1925 one of our large manufacturers of dental gold alloys developed a new hard, all purpose gold alloy. I tested this alloy and was able to secure more accurate fits, using a non-compensating technique, than I had when other types of alloys were used. Such claims must, however, be considered as being merely indicative and not conclusive.

#### PHYSICAL PROPERTIES

A correct understanding of the physical properties of all the materials used in the casting process is necessary if this process is to be thoroughly and conclusively mastered. If the effect of the linear casting shrinkage of a given alloy is to be compensated, this shrinkage must first be known. With this factor established, the other materials used in the procedure must be so manipulated that the effect of this shrinkage is completely compensated.

Working empirically a number of years ago, I developed a casting technique in which each step was carefully and uniformly carried out and in which a modification of the Scheu technique of hygroscopic expansion was used for securing most of the compensation. It was found, by using certain investment materials with careful control of waterpowder ratios, very smooth and accurately fitting castings could be made. Three years ago a simple vacuum mixing and investing procedure was added to this technique. Castings could now be made which were so smooth that the fits were considerably improved, and with surfaces sufficiently perfect that castings could be measured with at least a fair degree of accuracy.

This opened the possibility of further research. A simple apparatus was designed for measuring accurately both setting and hygroscopic expansion. Very few tests were needed to clearly indicate that the compensation values used were considerably in excess of 1.25 per cent. At that time I was working toward a Master's degree at Northwestern University Dental School. I showed my director, Dr. E. W. Skinner, Professor of Physics at the Dental School, my findings relative to hygroscopic and setting expansion. He suggested that I do my research and write my thesis on the linear contraction of gold and its alloys. This I proceeded to do. After the expenditure of much time and effort, I succeeded in designing and building a micrometer and flask which permitted the measuring of cast gold bars one inch long to 0.0001 inch. The flask was made of invar and its temperature was controlled by water cooling, the water being controlled  $\pm 1^\circ$  C. By this means, it was determined that the dimension of the mold could be maintained at all times within 0.0001 inch (the unit of measurement used). Pure gold, eleven experimental and four commercial gold alloys were tested. In addition to this, a technique alloy known as K metal was tested. From five to ten castings were made with each alloy tested. It was established by the method that pure gold had a linear shrinkage of 1.65 per cent  $\pm 0.03$  per cent. The lowest shrinkage alloy tested, No. 11, showed a linear shrinkage of 1.3 per cent. Commercial alloys varied from 1.58 per cent to 1.38 per cent. It is believed quite probable that other commercial alloys would show shrinkage values different from these. Further investigations have indicated that this is true.

#### RESEARCH

In view of the fact that the establishment of these new values might be far reaching in its effect on casting procedures, further investigations were made in an attempt to establish or disestablish

these new values; for in the final analysis, in the pursuit of scientific knowledge, there is only one thing in which we should be interested, and that is the truth. While the research which I carried out to ascertain the linear casting shrinkage of gold and its alloys was arduous, time consuming and expensive, yet I was and still am perfectly willing to acknowledge my error providing my findings can be proven incorrect. This further research was not made to defend my efforts, but merely in an attempt to ascertain, if possible, if my original findings were correct.

For this research a special double chamber flask was constructed embodying the same accurate measuring devices which were used in the invar water-cooled flask. This flask permitted the simultaneous casting of two bars of the same or different alloy. It will be appreciated that three castings would necessarily be made under exactly the same conditions, thus removing all variables, with the possible exception of one, and that is the variation in the casting temperature of the two melts. This would probably produce a comparatively small error in an uncooled flask such as this. However, if several tests were made, this effect would be largely overcome. All castings were in a hot flask, temperature 800° F. It will be observed that the results secured in a series of five tests, using pure gold, shrinkage 1.65 per cent, experimental alloy No. 11, shrinkage 1.3 per cent, gave a differential shrinkage between these two metals of 0.32 per cent—only 0.03 per cent less than the results secured in using the invar water-cooled flask, with everything very accurately controlled and carefully done.

To further verify these results, other methods were employed. A monel metal block one-eighth inch thick was prepared with three reamed holes approximately 0.375 inch in diameter, 0.0025 inch taper. It was believed that if wax patterns were made with identical fit to each reamed hole and these patterns invested in a single flask and cast simultaneously, using three metals of known shrinkage values

and compensation sufficient to make all castings slightly oversize, there should be a definite relationship between the amount these castings protruded above the surface of the die and their respective linear casting shrinkage. The results achieved are really quite remarkable. For instance, castings made of alloy No. 1 show an average protrusion of 0.014 inch more than pure gold, while alloy No. 11, at the far end of the die, shows an average protrusion of 0.022 inch more than alloy No. 1. It will be remembered that the difference between the linear casting shrinkage of pure gold and alloy No. 1 was established at 0.15 per cent. Between pure gold and alloy No. 11 it was 0.35 per cent. The close similarity of these two figures will immediately be apparent.

#### SHRINKAGE

As previously pointed out, attempts to establish shrinkage values by variability of the fit of castings might not be considered as a soundly scientific procedure. However, the casting technique used in this procedure reproduces accurately the surfaces of the wax pattern. The patterns used were very smooth. Each series of three castings was made in a single flask and cast simultaneously under identical conditions. Under these conditions, the remarkable correlation between each set of castings and between the average result and known variation of shrinkage of the metals used is such that the results can be considered as more than merely indicative.

Another test was made using a similar monel metal die. With this, however, the same metals were not used. In the place of pure gold, soft inlay alloy was substituted; alloy No. 1 was substituted with hard inlay alloy; and for alloy No. 11 was substituted a popular commercial, all purpose alloy whose Brinnell values are known to be very high. The shrinkage of these alloys is not known. Three wax patterns of identical fit were made for the three cavities in the monel metal die. These were mounted on a triple crucible



former, using a water-powder ratio of 3.25 to 1. It was considered probable that this would produce all castings oversize. This proved to be true.

To ascertain whether a form of casting of considerably different dimension from the one previously described would produce dissimilar results, the following test was made. A bronze block, 0.500 inch in thickness, was prepared, with three identical reamed holes. A study of the data will clearly indicate that there is very little difference in linear casting shrinkage between a long, attenuated specimen and a short, bulky specimen such as was used in the previous experiments.

Another study was made which had two objectives in view: (1) to show in another way the variation in linear casting shrinkage between pure gold and two alloys of known shrinkage values; and (2) to show if castings could be made accurate to dimension with any one of the three metals. The results secured in this study seem to be very definite and conclusive, and certainly tend to show that the variation in the linear casting shrinkage of pure gold and its various alloys is of great importance and that its effects can be very easily compensated.

In all the studies I have made to ascertain the linear casting shrinkage of gold and its alloys, including these more recent ones. I have deliberately restricted myself to castings of such dimension that they are quite similar in distribution of bulk to castings which are ordinarily made in restorative dentistry. A study of such castings, I believe, will show that all dental castings are small in size, practically never exceeding one-half inch in length; and their other dimension, width and thickness, are nearly always quite large. I believe that results secured using such bulky specimens will much more nearly simulate the linear casting shrinkage encountered in the construction of dental restorations than the use of a specimen of great length and small diameter (for example, a bar of 3.25 inches in length and 0.125 inch in diameter). This ratio of length to diameter, if reduced to the proportion of the largest

dental restoration (one-half inch in length) would give a diameter of approximately 0.038 inch.

#### CONCLUSIONS

These data, as presented, would seem to justify the following conclusions:

1. That the generally accepted linear shrinkage of gold and its alloys of 1.25 per cent  $\pm 0.1$  per cent is not correct for castings whose dimensions approach those of dental restorations;
2. That there is a marked difference in the linear casting shrinkage between pure gold and the various alloys. So far as actually determined, this difference is as much as 0.35 per cent. It is believed that further studies will tend to increase still more this differential;
3. That this differential in shrinkage is sufficient so that it should be recognized and properly compensated in casting procedures;
4. That if the linear casting shrinkage of each alloy is known and properly compensated, a much higher degree of precision can be obtained than heretofore;
5. That compensation for the various shrinkages can probably be made on a mathematical basis without unduly complicating the casting technique;
6. That the results secured in these studies clearly indicate that the manufacturers of dental gold alloys should supply their linear casting shrinkage along with the other data.

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(Continued on page 20)

# NEWS OF THE BRANCHES

## ENGLEWOOD

At the time of writing this column the weather bespeaks of approaching spring, although I won't put my neck out as to what it will be when this does appear in print. So, as we think of approaching spring, we think of the selection of our new officers to be held at our next meeting on April 8. . . . At our last meeting of March 11 we had fifty at dinner and approximately ninety attended the meeting which was handled by our very able speaker, Dr. Ralph Rudder. Any who missed this well-handled and practical speech can regret it for it was one which demonstrated how many a heartache could have been saved by knowing just what to do when emergencies arise. Our hats go off to you, Ralph, for an hour and a half so well spent. Our spirits begin to rise higher as we see our meetings show signs of being well attended. We can promise you that you'll not be sorry for coming because so much can be carried back to everyday practice. . . . Our next meeting of April 8 will be conducted by Dr. George Teuscher, whose subject will be, "Diagnosis and Treatment Planning for the Child Patient." Along our scope we see that each day planning becomes more and more necessary as business settles into a normal pattern of solid foundations, and surely the child patient takes our prime focus in this design, so let's be at the meeting. . . . We find Englewood traveling: Jerry Wilher is in Florida; Leo Finley is on his way. Harold Hayes, Ben Jostes and Tom Cavanaugh should be browned by the Florida sun by this time. Sam Rabishaw is in New Orleans. John Hospers is in Altadena, California and is happy to report that he saw George Knapp. J. McMahon is in Biloxi, Mississippi, and Milton Cruse is in Dallas, Texas. . . . We're very happy to report that Miles Gallagher is out of the hospital and feeling better. . . . Ed Werre is having a branding iron made so

that when Bill Shippee tries to shift pan fish for his harder-to-get trout it just won't work, and so Shippee will have to quit playing pinochle during fishing hours. . . . We have observed that the choice onions of the Hayes Hotel are being delivered to Bill Phillips in person. Does anybody like onions? . . . One of our members, Franch Kuchler, has five hundred colored slides of our country's glorious West and we wouldn't be surprised if he weren't talked into showing them at one of our meetings. . . . Leslie Quant is an active supporter of our Englewood dinners since he enjoyed the last one.—*Theodore H. Vermeulen, Assistant Branch Correspondent.*

## NORTH SIDE

Marshal Nilsson, Carl Gieler, Walter Davis, Bill Osmanski, Russell Boothe, Herbert Gustavson and Raymond Orsinger all attended the North Shore Kiwanis Club Ladies' Night held at the Sheridan Plaza Hotel. The entertainment and dinner were excellent and enjoyed by everyone. . . . Johnny Bodine and Russell Boothe also attended the dinner dance given by the Sunset Ridge Country Club. . . . A. F. Conarty is a camera fan and never misses an opportunity to click a shutter. . . . Jim Lusk has returned from a delightful Florida vacation. . . . Phil Schoen recently purchased a house in Edgebrook. . . . Paul Clopper, Secretary of the Illinois State Dental Society, paid Chicago a visit last week. . . . To give the wire benders their due, it is interesting to note that an orthodontist by the name of Harry B. Wright is recognized as the North American explorer who knows the most about Brazilian jungle exploration. He was the first North American to contact the Roncador-Xuiger expedition which has been exploring the Brazilian hinterlands for the past forty-three months—these orthodontists sure get around. . . . Remem-

ber clinic night April 7, which will be a general clinic night in contrast to the last one which was strictly full denture. Harold Hillenbrand is clinic chairman and promises an interesting evening.—*Orrin Baumgarth, Branch Correspondent.*

#### NORTHWEST

A big turnout should greet Lloyd Dodd's appearance to speak on Practice Management if advance promises of attendance are a criterion. Our past presidents sitting as the nominating council, with Frank Biedka presiding, met and selected their choice for treasurer and member of the branch board of directors. With a continuation of the fine attendance and the comprehensive interest shown, the welfare of the branch will continue uppermost in the minds of the past presidents. . . . Our branch should have quite a number of new names added to the roster if all of those who applied at the Midwinter Meeting are passed on favorably. . . . Our next branch meeting is scheduled for Friday, April 18. Chairman Gerson Gould has promised us a night of fellowship and entertainment. This night is in honor of the Albany Park group, so all men of that section take due notice and come out in large numbers. It is also to be election night. Come out and partake in the activities of what should be your most important society. Fellow Kenwood correspondent Lawrence Johnson's admonishment to dentists to travel plenty because of our comparatively short life span hit a responsive chord. Good advice, Lawrence. . . . John Svoboda is going to give oral surgery and himself a rest by going to California for a reunion with brother Ben, our former member. Secretary Pete Wlodkowski has moved "up the ladder" very rapidly by having been elected from scratch to Vice President in a building and loan association. Anybody needing money see Pete. . . . Gus Johannes is wearing a broad smile these days when he speaks of his first grandchild. Incidentally, Gus feels pretty good after a twenty-day stay at the Mayo Clinic. He

came back "lighter" anyway you want to take it. Plays "Bass" swell now. . . . Abe Tamarin is at it again. This time it's an article on "Preservation of the Interproximal Spaces in the Short-Bite Acrylic Bridge," published in the Dental Digest issue of February. Edward T. Suffka, after three years of service in the Army, has opened an office at Devon and Central Avenues in Edgebrook. An advertisement in the Edgebrook Events reads: "Found—a set of false teeth—Mulberry 4895." Anybody know anything about this? . . . President Bob Placek and Ches Stypinski are boiling out at Hot Springs and tuning up their golf clubs. Don't forget to ask strokes when you play them. Bob drove down in his brand new shiny Chevrolet. . . . Jerry Rund and wife are enjoying a nice vacation in Florida. The card says he may fly to Cuba. Joseph S. Kaufman has opened up an office at 2756 West Division and California Avenues, in which building his physician father practices. . . . As we go to press, we received the sad news of the death of a charter member of the branch, Oscar Gilbertson. The sympathy of the branch is extended to the family.—*Gustave J. Tilley, Branch Correspondent.*

#### WEST SUBURBAN

The West Suburban Round Table met at noon on March third at the Oak Park Club. Mr. Evans, a representative of the American Red Cross, gave a very clear word picture of the work of the Red Cross and the need for each of us to contribute to the present drive as generously as possible. The scientific program was given by Dr. John Svoboda of the Oral Surgery Department of the Chicago College of Dental Surgery. He gave a very splendid talk on the important uses of X-rays in dental diagnosis. The members of the Round Table voted unanimously to continue monthly meetings for the next six months, all of which will be held at the Oak Park Club at noon. . . . Al Mayer returned from a month's vacation during which time he attended the Mardi Gras in New Orleans; and also spent some time in Biloxi, Mississippi and Hot

Springs, Arkansas. . . . V. G. Hauff has just returned from a month's sojourn in Florida and Cuba. . . . Henry Ladwig has also just returned from a Florida vacation of one month. . . . Word has come that a baby girl arrived March first in the home of Joseph N. and Mrs. Smejkal. . . . Lyle McNamara and family are in Florida. . . . Paul Topel is in charge of the West Suburban Dental Society Red Cross Drive. . . . West Suburban Branch was saddened by the sudden passing of Benjamin D. Barber, one of our oldest members. He was President of West Suburban in 1914 and 1915. He was a very splendid presiding officer and was very proud of West Suburban. In those days both Frederick B. Moorehead and John P. Buckley attended the meetings of West Suburban. . . . Word has come that our good member, Lyle Filek, has had a rather serious mishap to his wrist. Best wishes for an early recovery, Lyle. . . . At the regular meeting of the West Suburban Dental Society on March eleventh, the report of the nominating was given by Chairman Kelly Frakes, which was as follows: Arnold Pins for President, Bernhardt T. Siegrist for President-elect, H. P. Westaby for Vice-President, William O. Vopata for Secretary, C. A. Hanson for Treasurer, Ernest Hudec for Librarian, and Ed Moore for Trustee. Their election was unanimous. . . . Two more of our members are on vacation. Ernie Hudec is driving his new car to Florida. Arthur Skupa is spending two or three weeks in Arizona. . . . Rudolph Hinrichs has procured George E. Ulvestad, Jr. as the next speaker for the noon meeting of the Round Table on April seventh. His subject will be "The Use of Alginate Impression Materials for Individual Restorations." . . . The program given at the March eleventh meeting was a showing of Dr. Lundquist's new film on Periodontia. It was shown by Dr. Ellen Sollar of the Oral Pathology Department of Northwestern University Dental School. This was a very excellent program. . . . The next evening meeting of the West Suburban Branch will be held on Tuesday, April eighth, and the

speaker will be Dr. Wayne B. Slaughter of Cook County Hospital Staff. His subject will be on "Facial Anomalies."—*Asa J. LaGrow, Branch Correspondent.*

#### KENWOOD-HYDE PARK

Louis Christopher is now the proud father of a baby girl. Wonders will never cease, however, the report is that father is doing very well. Louis' troubles are all over now as it has been told to me that after the first six it's easy. . . . I understand that Dr. Case is ill. Hope he has a speedy recovery. . . . B. L. Herzberg is in Tucson, Arizona. Afterward he leaves for California to attend the Los Angeles Orthodontic Meeting which is being held there. . . . The Nominating Committee has nominated the following as officers for Kenwood-Hyde Park Branch for the coming year—President, W. L. Spencer; President-Elect, Chester Blakeley; Vice-President, Christian Davidson; Secretary, Lawrence H. Johnson; Treasurer, P. L. Mathisen and Board of Directors, Robert G. Pinkerton. . . . By the time this is in the hands of our readers, Willard Johnson will have been in Syracuse, New York visiting Dr. M. J. Wasserman and will have received tips on the use of gas for analgesia. Dr. Wasserman uses this method consistently for all dental cases. . . . Dr. Orion Stuteville of Evanston is to be our essayist for the April 1 meeting.—*Lawrence H. Johnson, Branch Correspondent.*

#### WEST SIDE

Eighty men attended our last meeting and according to L. T. Weinshenker, our dinner chairman, thirty-eight men were present at the dinner. Dr. R. I. Lewis, chairman of the Dental Division of the American Red Cross, appealed to the members to contribute now to the Red Cross. . . . The guest speaker, Charles W. Freeman, Dean of the Northwestern University Dental School, delivered a most interesting and informative talk on the "Present and Future Trends in Dental Education." He emphasized that the future of dentistry lies in better care



for children, better and improved methods of prevention and less reconstruction. . . . Mr. W. Blaesing, the chief horticulturist of the Chicago Park Systems, presented an excellent talk to flower-lovers and showed gorgeous color slides of amaryllis, poinsettias, cyclamens, azalea, chrysanthemums and orchids. He mentioned that any visitor to the Garfield Park Conservatory on Sundays would almost always find the diligent and ardent artist and program chairman, Harry L. Rubens, sitting on his ischium sketching "Cala Lilies in Bloom Again." Mr. Blaesing invited all members to the conservatory, and if you have any flower problems don't hesitate to call him at Kedzie 1281 and your worries will be over. . . . The West Side Branch set another precedent. This time it elected a World War II veteran, William R. Gubbins, to the presidency for the 1947-1948 season. Good Luck Bill! Will hear from him when he takes over the gavel. . . . After thirty months of army service, Captain Paul Bernstein returned to civilian practice at 3952 West Jackson Boulevard. . . . Leonard Gelfand donned his civies and opened his office at 3356 West Roosevelt Road after serving thirty-nine months in the Army Air Force. . . . Joe Porto was reelected secretary of the Xi Psi Fraternity. Joe recently delivered a talk on the "Infantile Paralysis Foundation" at the Magic Carpet Luncheon Club at the Sherman House. Knowing how we all can benefit from this organization, we should help to build more and better facilities for the stricken victims. . . . Harold Epstein is breaking in his new Ford by driving many of his Alpha Omega fraters to Waukesha, Wisconsin. . . . Al Sells needs a Japanese interpreter to help him take pictures with the camera he received as a gift from Tokyo. He heard a rumor that when you open the camera to insert the roll of films you can never put it back together again, so come on boys let us give him a helping hand and a bit of advice. Here it is in a nutshell—to take color pictures when the sun is shining use stop F-8 at 1/50 second. When the sun is not shining don't take pictures, go to sleep instead.

. . . After a five year wait, George Vogt finally got his big Johnson's Sea Horse outboard motor and is readying himself to try it out on Lake Dewey, Michigan. . . . Max Chubin finally found an apartment largely through the efforts of his wife's Mah-Jong Club. He also informed me that it cost him "Baizem" and that is not hay! . . . J. Vission's brand new De Soto is no longer new—both his front and rear fenders are creased in the middle. . . . **SPECIAL NOTICE:** Our next meeting will be the installation of officers and will be held on Tuesday, April 22 at the Midwest Athletic Club. . . . The next two issues will be written by the genial and hard working associate branch correspondent, Irvin C. Miller. Come on, boys, give him a ring at Seely 7447 and pour out your news and views. Bon Voyage!—*Maurice C. Ber-*  
*man, Branch Correspondent.*

#### NORTH SUBURBAN

The North Suburban Branch held its regular monthly meeting at the North Shore Hotel on March 11. The principal speaker of the evening was Dr. William S. Hoffman, Director of the Hektone Institute for Medical Research, who gave a two hour and fifteen minute talk on "Penicillin." This may seem like a long time, but to those that were in attendance, the time seemed to fly by, and most of us could have listened to him for two hours more. Dr. Hoffman covered the historical, biological and chemical aspects, and then gave some very practical advice on the use of the drug in relation to dentistry. President Poyer read the report of the Nominating Committee in regard to the new officers for the coming year. Arthur Leaf has been nominated for the Presidency, LeRoy Hedges for Vice-President, Harry Chronquist for Secretary, Waldo Urban for Treasurer and Jim Fonda for The Chicago Dental Society Board of Directors. President Poyer also announced the fact that the next regular meeting of the North Suburban Branch would be held on April 8, at the North Shore Hotel in Evanston. The main speaker will be Dr.

Ira Jones, widely known chemist and speaker, whose subject will be "Trends of Modern Chemistry." . . . Noel Young of Lake Forest died suddenly at his home on Sunday, March 2. He graduated from Northwestern University in 1928 and practiced with his uncle in Lake Forest for a number of years before moving to the Pittsfield Building. Noel was one of the outstanding dog fanciers of the North Shore. The members of North Suburban Branch wish to express their heartfelt sympathy to his family. . . . The Lake County Dental Society held its monthly meeting at the Deerpath Inn, Lake Forest, on Monday, March 3. A. L. "Tony" Berg was the clinician. He demonstrated the art of hypnotism, preparing a cavity and taking an impression for an inlay while the patient was asleep. Tony is a firm believer in hypnotism for certain types of patients, and has had remarkable success with it. . . . The Winnetka-Glencoe-Kenilworth Study Club met at the Hearthstone in Winnetka on Tuesday evening, March 4. The speaker was Mr. Peterson, Executive Secretary of the National Committee of Dentists. He gave an informative talk on the present status of the compulsory health insurance legislation. President George Howell presided and Pete Mundell acted as moderator for the question and answer period that followed. . . . L. V. Stephenson is basking in the Florida sun, and no doubt trying to brush up on his golf game. . . . Ed Ryan is also in Florida, as well as O. B. Kibler and Tod Dewel. Tod expects to spend a little time at Nassau too. . . . G. B. Upson has been very ill, but we are happy to report that he is now home and coming along all right. . . . Zeke Smothers has just returned from a trip to the upper peninsula of Michigan where he was visiting his mother. . . . Twenty members of the Kiwanis Career Club made a tour of Bob Lasater's office. These individuals are interested in dentistry as a career, and I know of no one that could give them a better picture of what our profession is like. . . . The University of Illinois College of Dentistry announces evening postgraduate lecture and seminar courses. The first series starts

on April 7, and will be about "Diet and Nutrition in Dental Practice." The second of the series starts on April 16, and embody "The Masticatory Mechanism." Further information about these and the rest of the series can be had by writing or calling Dr. Isaac Schour, 808 South Wood Street, Chicago 12, or by telephoning Monroe 3900 (Ext. 375). . . . Don't forget to do your part for the RED CROSS. All subscriptions whether business or residential will be credited to the quota of the Chicago Dental Society.—*Edward J. Sullivan, Branch Correspondent.*

#### GOLD INLAY TECHNIC

*(Continued from page 15)*

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#### NEWS AND ANNOUNCEMENTS

*(Continued from page 10)*

cian, Dr. Rhea A., dentist and James A.; and a sister, Mrs. E. L. Miller of Yankton, South Dakota.

#### DR. BENJAMIN D. BARBER 1896-1947

Dr. Benjamin D. Barber, a member of the West Suburban Branch up until a few years ago, passed away February 27. He was found dead of a heart attack in his office and home at 132 North Oak Avenue, Oak Park.

Dr. Barber was graduated from the Chicago College of Dental Surgery and practiced in Oak Park for more than forty years. He was president of the West Suburban Branch in 1914-15.

He is survived by two daughters, Mrs.

*(Continued on page 23)*

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The following applications have been received by the Ethics Committee: Any member having information relative to any of the applicants, which would affect their membership, should communicate in writing with Dr. Lester E. Kalk, 5500 S. Halsted St. Anonymous communications or telephone calls will receive no consideration.

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Edward J. Sullivan *North Suburban*  
1905 Central St., Evanston, University 6565  
Asa J. La Grow *West Suburban*  
715 Lake Street, Oak Park, Euclid 6896  
Lawrence H. Johnson *Kenwood-Hyde Park*  
716 E. 75th St., Triangle 3436

## Contributions

Manuscripts should be typewritten, double spaced, and the original copy should be submitted. Every effort will be made to return unused manuscripts, if request is made, but no responsibility can be accepted for failure to do so. Anonymous communications will receive no consideration whatever.

Manuscripts and news items of interest to the membership of the Society are solicited.

Forms close on the first and fifteenth of each month. The early submission of material will insure more consideration for publication.



## Classified Advertising

### FOR SALE

**For Sale:** Practice, equipment and lease in best North Side office building. Waiting list for space, no vacancies in this building. Doing part time work and grossing over \$10,000. Prefer to stay several months to work with you and transfer patients. \$5,000 cash or will keep equipment and sell for \$4,000. Address P-15, The Fortnightly Review of the Chicago Dental Society.

**For Sale:** D. C. lathes, Durmore alloy grinder, Barkmeyer porcelain oven, Ney surveyor, two casting machines (Kerr and Perfection), gold scales (Sederer-Kohlbusch), all in excellent condition reasonably priced. Telephone Haymarket 5941.

**For Sale:** Dental unit with Ritter engine; cabinet and chair. All in excellent condition. Reasonable. Telephone Palisade 5290.

**For Sale:** Ganley-Kleen air compressor, Model No. 34 (AC), Huppert electric wax eliminator No. 2 (used three times). Contact, Balboa Dental Laboratory, 1607 Howard Street, Chicago 26, Illinois—Telephone, Rogers Park 7233.

**For Sale:** Direct current Ritter senior unit, Ritter chair, two cabinets—in good condition; reasonably priced. Address P-16, The Fortnightly Review of the Chicago Dental Society.

**For Sale:** Harvard unit and cabinet; cream colored. Telephone, Edgewater 2000.

**For Sale:** A well located and well established modern office in a suburb close to Chicago along the Chicago, Burlington and Quincy Railroad. Very convenient transportation by bus, train and auto to Chicago, Oak Park and all West Side suburbs. Rent is very reasonable. Retirement is reason for selling. Address P-17, The Fortnightly Review of the Chicago Dental Society.

**For Sale:** Dental office completely equipped and modern; new x-ray—reasonable. Western and Devon vicinity. Telephone Nevada 4616.

**For Sale:** Practice established thirty-five years. Will stay and introduce patients. Also two complete modern dental equipments in cream white—all chrome Howell. Air conditioned office; excellent location at Broadway, Clark and Diversey. Telephone Graceland 1479.

**For Sale:** Fully equipped dental office and lease. Ritter master unit, S. S. White chair, American cabinet, reception room furniture. All in excellent condition; in Hyde Park district. Telephone Hyde Park 2026.

**For Sale:** Well established, two chair office with x-ray, gas machine and fine equipment. Located in Austin. Good reason for selling. Telephone in mornings, Franklin 5588 for particulars.

**For Sale:** Barkmeyer porcelain furnace; DC boiler; midifier; also three dental assistants' uniforms—sharkskin, slightly used, size 14. Telephone Randolph 3519 or Randolph 3122.

**For Sale:** Harvard chair and Harvard unit. American cabinet, Pelton sterilizer base and waste receiver—\$300.00 Telephone Humboldt 7754.

**For Sale:** Dental unit, cabinet and chair, sterilizer—ivory color. Reasonable. Inspection invited. Telephone Rogers Park 7526.

**For Sale:** One No. 2 S. S. White Diamond chair (mahogany); one like-new Meyer dental x-ray machine. Reasonable. Telephone Mr. Moody, Central 0981.

### FOR RENT

**For Rent:** Will sublet dental office on Northwest Side. Immediate possession. Telephone National 1110.

**For Rent:** Dental office on West Side for four days a week. Telephone Kedzie 4640 on Tuesdays and Thursdays.

**For Rent:** Modern dental office in Loop building for two or three days a week. North light; switchboard service; reasonable rent. Address P-10, The Fortnightly Review of the Chicago Dental Society.

**For Rent:** Equipped dental office part time, with chance to buy same. Located on the North Side. Address P-11, The Fortnightly Review of the Chicago Dental Society.

**For Rent:** Choice two chair office in well known professional building. Newly decorated. Ready to move into now. Elevator and nightly cleaning service. Excellent transportation—elevated and surface lines. Telephone Fairfax 0708.

**For Rent:** Or for sale; fully equipped dental office including x-ray in South Shore district. All equipment in excellent condition; set up and being used at the present time. Address P-21, The Fortnightly Review of the Chicago Dental Society.

(Continued on page 23)

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A complete service in medical and dental personnel . . . Nation Wide

**NEWS AND ANNOUNCEMENTS**  
(Continued from page 20)

Lawrence Smith and Mrs. Marian Iverson, and a son, Wayland.

**DR. NOEL S. YOUNG**  
1902-1947

Dr. Noel S. Young of Lake Forest passed away Sunday, March 2. He practiced for a number of years with his uncle in Lake Forest before moving to the Loop, where he maintained an office at 55 East Washington Street.

Dr. Young was a member of the North Suburban Branch and was graduated from Northwestern University Dental School in 1928. He was prominent in the Lake County Dental Society having served as president of that organization a few years ago. He is survived by his widow, Dorothy, and a son, Noel, Jr.

**CLASSIFIED ADVERTISING**  
(Continued from page 22)

**For Rent:** Available May first fully equipped office, large suite on Michigan Avenue near Madison. Full or part time. Share reception room and laboratory. Switchboard service. Sale considered later. Address P-12, The Fortnightly Review of the Chicago Dental Society.

**WANTED**

**Wanted:** Will pay cash for dental office and practice in Loop area or North Side. Address P-18, The Fortnightly Review of the Chicago Dental Society.

**Wanted:** Experienced dental assistant. Reasonable hours; good salary; no nights. Telephone Longbeach 3349.

**Wanted:** Licensed oral hygienist. High monthly salary guaranteed and commission. Address P-19, The Fortnightly Review of the Chicago Dental Society.

**Wanted:** Part time position as dental assistant—some experience. Will work several hours a day or evenings. Prefer Berwyn-Oak Park-Cicero district. Telephone Olympic 6008.

**Wanted:** Recent graduate desires position with practicing dentist for evenings only. Address P-20, The Fortnightly Review of the Chicago Dental Society.

**Wanted:** Veteran; four years' service in the Navy, former internship in Oral Surgery at Bellevue Hospital, New York, wishes association with practicing dentist. North Shore suburbs preferred (Lake County). Address P-22, The Fortnightly Review of the Chicago Dental Society.

**Wanted:** Associate—competent operator in general dentistry. Ethical; part or full time. Splendid opportunity. Newly equipped air conditioned Southwest Side office. Reply giving age, education, experience, abilities, hobbies and hours available. Address P-23, The Fortnightly Review of the Chicago Dental Society.

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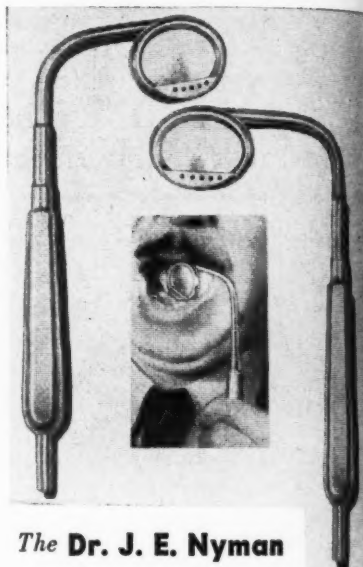
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**SALIVA EJECTOR,**

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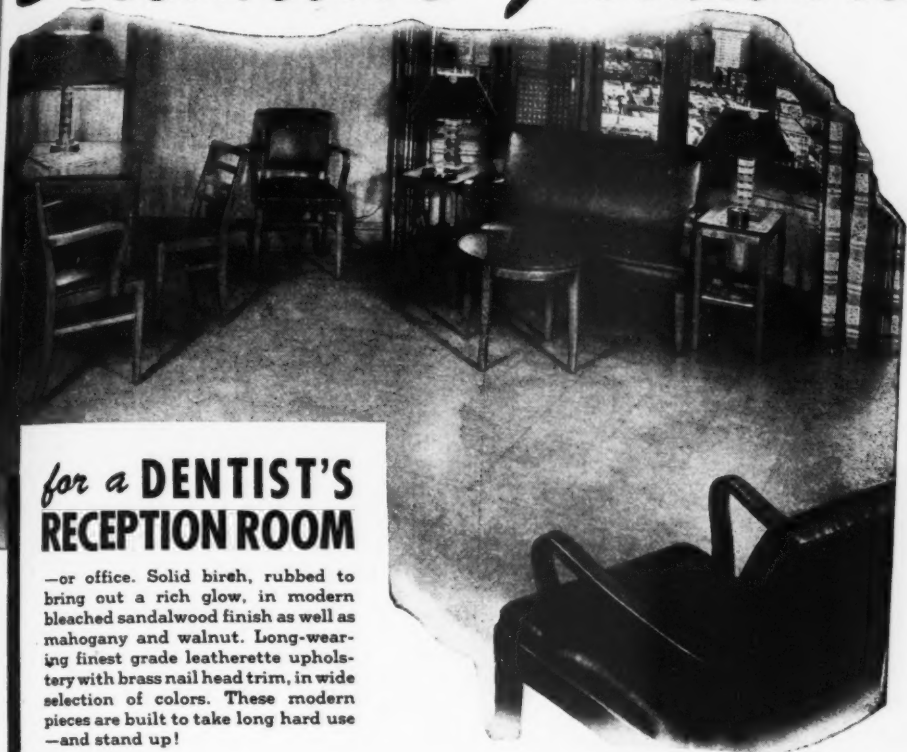
These instruments eject, deflect, and reflect, permitting a clear, dry field in the area of operation. Angles are formed in such a way as to obtain perfect depression of the tongue while the patient himself holds the instrument. Allows unrestricted tongue function while protecting it from other instruments. New patent applied for. 1945 catalog sent upon request showing new features for Exodontia.

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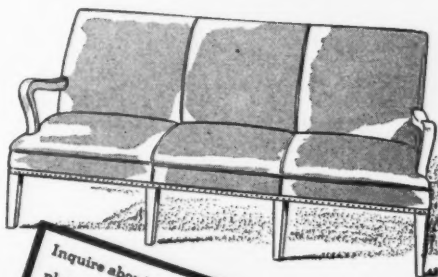
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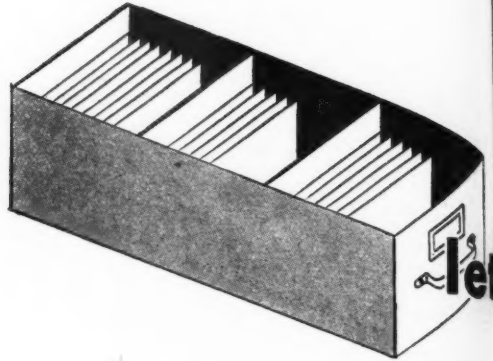
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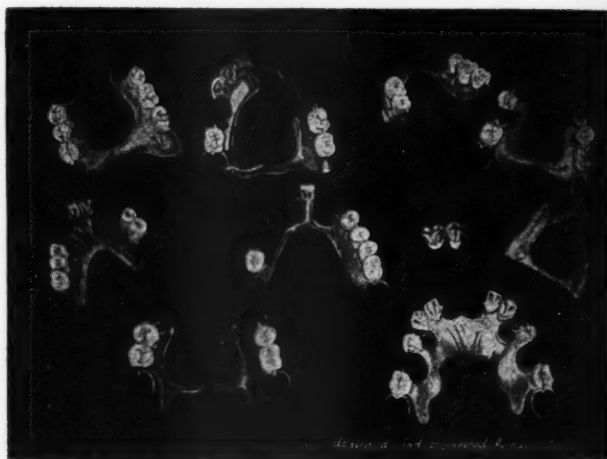


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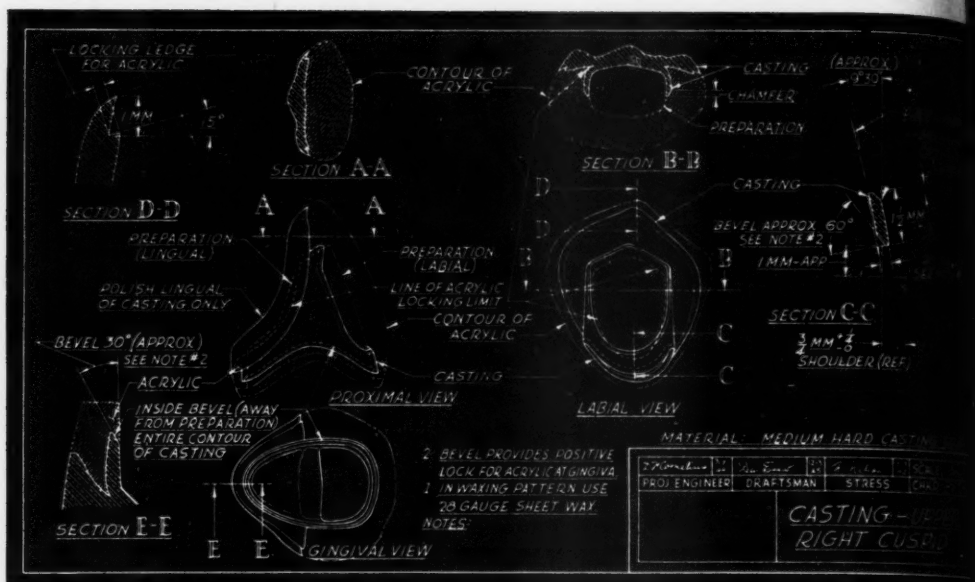
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